

## Oribatid Mites of the Family Otocepheidae from Tian-mu Mountain in China (Acari: Oribatida)<sup>1)</sup>

Jun-ichi AOKI<sup>2)</sup> and Sheng-hao HU<sup>3)</sup>

青木淳一<sup>2)</sup>・胡 聖豪<sup>3)</sup>: 中国浙江省天目山から得られた  
イカダニ科のササラダニ類<sup>1)</sup>

**Abstract** *Dolicheremaeus wangi* sp. n. is described from Tian-mu Mountain, Zhejiang Province, China. *Dolicheremaeus infrequens hachijoensis* AOKI and *Trichotocepheus erabuensis* AOKI, are reported for the first time from China.

As members of the Sino-Japanese cooperative work on soil animals the authors collected three species of oribatids belonging to the family Otocepheidae at Tian-mu Mountain in Zhejiang Province. Of these, two species identified with *Dolicheremaeus infrequens hachijoensis* AOKI, 1967, and *Trichotocepheus erabuensis* AOKI, 1965, have hitherto been known only from the subtropical regions of Japan, and the remaining one seems to be a new species of the genus *Dolicheremaeus*.

### *Dolicheremaeus wangi* sp. n.

(Figs. 1–3)

**Measurement.** Body length 745–825  $\mu\text{m}$ , width 385–435  $\mu\text{m}$ .

**Prodorsum.** Lamellar ridge hardly reaching rostral margin; the posterior part showing double structure, being accompanied by a short inner ridge. Lateral lamelliform expansion well developed. Rostral and lamellar setae strongly curved inward, densely barbed on outside. Interlamellar seta directed upward, weakly and sparsely barbed. Sensillus with a long, slender pedicel curving backward, bearing a weakly swollen spindle-shaped head. Exobothridial seta long. Lateral prodorsal condyle (*co. pl*) trapezoid with rounded corners. Ventral bothridial plate triangular with rounded tip.

**Notogaster.** Notogaster rather stout 1.15–1.22  $\times$  as long as wide. Lateral notogastral condyle (*co. nl*) large and triangular, overlapping tip of lateral prodorsal condyle. Ten pairs of notogastral setae thin, long and whip-like: seta *ti* reaching insertion

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2) Institute of Environmental Science and Technology, Yokohama National University, Yokohama, 240 Japan

横浜国立大学 環境科学研究センター 〒240 横浜市保土ヶ谷常盤台 156

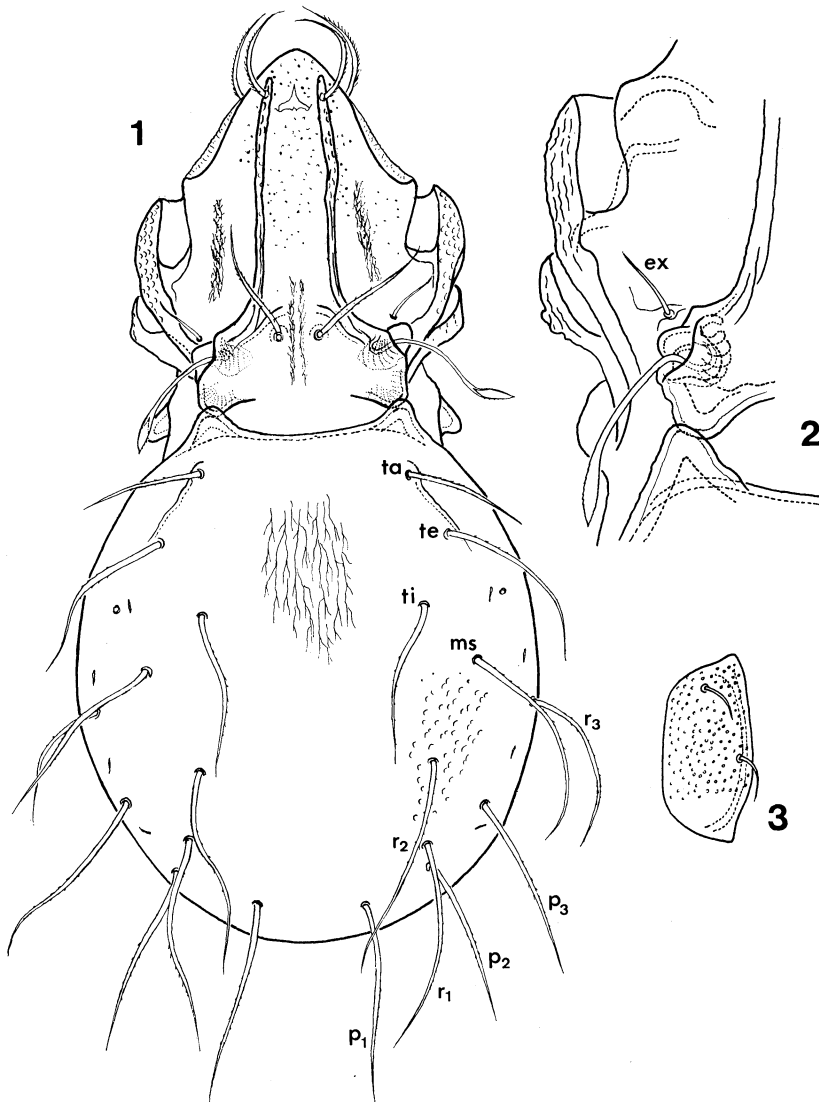
3) Shanghai Institute of Entomology, Academia Sinica, Shanghai, China

中国科学院 上海昆虫研究所

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of  $r_2$ ; seta *te* reaching insertion of *ms*; seta  $r_2$  reaching posterior margin of notogaster. A faint, short ridge found lateral to insertion of setae *ta* and *te*. Lyrifissure *im* situated closely median or medioanterior to gland opening (*gla*). Surface of notogaster showing weak foveolation and fine veiny structure.

*Ventral side.* Epimeral and ventral plates mostly showing veiny pattern of surface structure. Genital plate wrinkled longitudinally, with 4 setae curving toward



Figs. 1–3. *Dolicheremaeus wangi* sp. n.—1. Dorsal side. 2. Lateroposterior part of prodorsum, showing sensillus, bothridium, exobothridial seta and lateral condyles on prodorsum and notogaster. 3. Anal plate.

posterior direction. Anal plate covered with small granules except on the smooth posterior part (Fig. 3), with 2 long setae. Three pairs of adanal setae long,  $ad_3$  being situated nearly in the level of anterior margin of anal opening. Adanal fissure short, aligned parallel to lateral margin of anal aperture. Setal formula of epimerata: 3-1-3-3.

*Legs.* All legs monodactyle. Type of ultimate setae: L-S-S-S. Solenidion  $\omega_1$  on tarsus I not so long to reach tip of claw, but just reaching basal end of claw.

Type series. Holotype (on slide): Tian-mu Mountain, Zhejiang Province, China. 2-IX-1989. J. AOKI, S.-h. HU and X.-z. WANG.—Paratype: the same data as holotype. The holotype is deposited in the collection of Shanghai Institute of Entomology, Shanghai and the paratype in the collection of National Science Museum, Tokyo.

Remarks. The new species is most closely related to *Dolicheremaeus oginoi* (AOKI, 1965) from Thailand, but is distinguishable from the latter by 1) long exobothridial setae, 2) long notogastral setae (RLN of the setae are 25-41, while those are 21-30 in *D. oginoi*), 3) granulate anal plates, and 4) larger body size (the body length of *D. oginoi* ranges 569-675  $\mu\text{m}$ ).

In the figure of the original description of *Dolicheremaeus oginoi*, AOKI (1965a) failed to draw lateral lamelliform expansions and exobothridial setae. A re-examination of the type series of the species revealed that *D. oginoi* has narrow lateral lamelliform expansions (*spa. l.*) and very short exobothridial setae (*ex*). The expansions and the setae are well developed in the new species.

The name of the new species is dedicated to Mr. Xiao-zu WANG, the former professor in Shanghai Institute of Entomology, who made an initial contribution to the study of oribatid mites in China.

### *Dolicheremaeus infrequens hachijoensis* AOKI

(Figs. 4-8)

*Dolicheremaeus infrequens hachijoensis* AOKI, 1967, p. 336.

Measurement. Body length 1,110  $\mu\text{m}$ , width 535  $\mu\text{m}$ .

Collecting data: 1 ex. Tian-mu Mountain (St. 1), Zhejiang Province, China. 2-IX-1989. J. AOKI, S.-h. HU and X.-z. WANG.

The species *Dolicheremaeus infrequens* has 4 subspecies: *D. infrequens infrequens* AOKI, 1967 from Central and West Japan, *D. infrequens hachijoensis* AOKI, 1967 from Hachijo Island of Japan, *D. infrequens amamiensis* AOKI, 1982 from Amami-Oshima Island of South Japan and *D. infrequens taiwanus* AOKI, 1991 from Taiwan. In order to examine which subspecies the Chinese specimen belongs to, the authors made "star-graph analysis" as shown in Fig. 4. As the result of the examination the shape and size of the graph of the Chinese specimen is most similar to that of *D. infrequens hachijoensis* and the authors decided the specimens from Tian-mu Mountain should be identified as this subspecies *hachijoensis*.

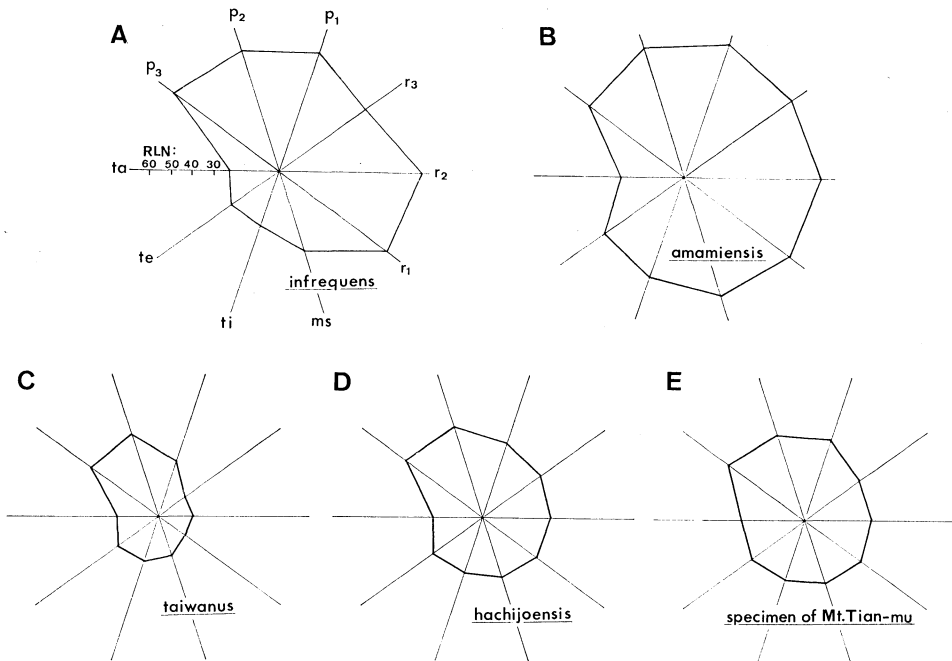


Fig. 4. Star-graph analysis of relative length to notogaster (RLN) of notogastral setae on the four subspecies of *Dolicheremaeus infrequens* AOKI and the specimen from Tian-mu Mountain. Each distance between center and corner of a polygon shows RLN ( $= (\text{length of seta} / \text{length of notogaster}) \times 100$ ) of notogastral setae (*ta*, *te*, *ti*, *ms*,  $r_1$ – $r_3$  and  $p_1$ – $p_3$ ). All the polygonal figures are drawn in the same scale as the figure for *infrequens*.

### *Trichotocephus erabuensis* AOKI

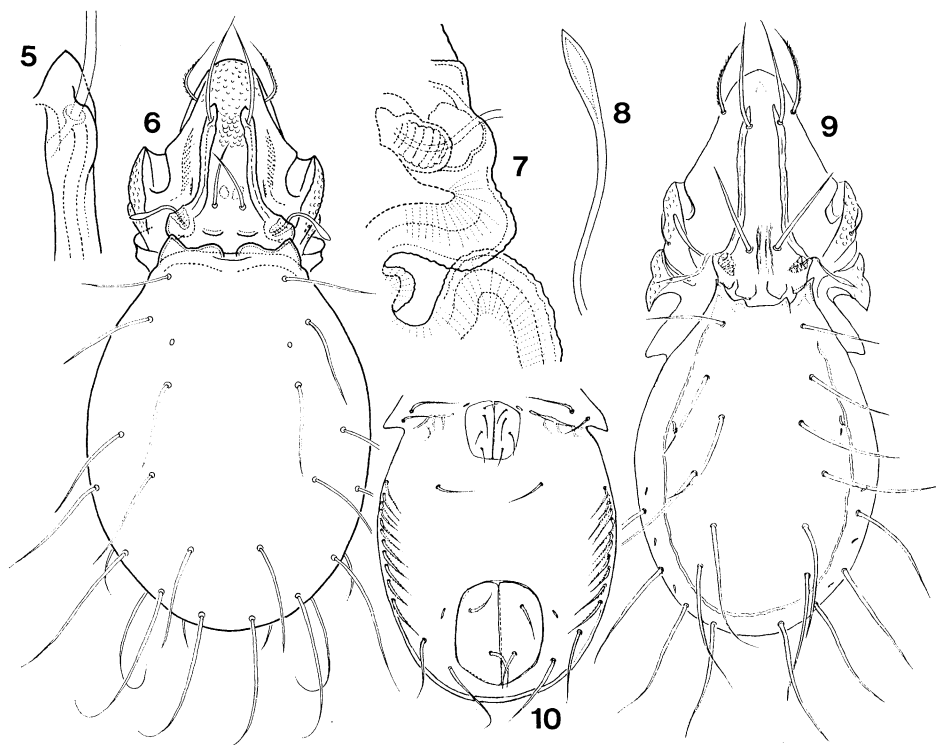
(Figs. 9–10)

*Trichotocephus erabuensis* AOKI, 1965b, p. 325, figs. 130–135.

Measurement. Body length 1400  $\mu\text{m}$ , width 680  $\mu\text{m}$ .

Collecting data: 1 ex. Tian-mu Mountain (St. 3), Zhejiang Province, China. 2–IX–1989. J. AOKI, S.-h. HU and X.-z. WANG.

The specimens from Tian-mu Mountain are well in accord with the Japanese species *Trichotocephus erabuensis* AOKI in having long, whip-like notogastral setae, strong neotrichy in adanal setae and distinct angulation on the median side of lateral notogastral condyle. The Chinese specimens, however, show some differences in that the notogaster exhibits no neotrichy except for one specimen with one pair of setal pore between setae  $r_1$  and  $r_2$  and femur III bears 3 setae instead of 2. The authors do not consider such differences so important to separate the Chinese form as a new subspecies, because the number of neotrichial setae tends to be much flexible.



Figs. 5-10. 5-8. *Dolicheremaeus infrequens hachijoensis* AOKI.—5. Tip of lamella (right side). 6. Dorsal side. 7. Lateral condyles on prodorsum and notogaster. 8. Sensillus. 9-10. *Trichotocepheus erabuensis* AOKI.—9. Dorsal side. 10. Anogenital region, showing a neotrichy of adanal setae.

### 摘 要

中国亜熱帯林の土壌動物に関する日中共同調査によって得られた土壌ダニ類のうち、イカダニ科の3種について報告した。そのうちの1種は新種 *Dolicheremaeus wangi* sp. n. でタイ国から知られている *D. oginoi* (AOKI) に近いが胴背毛や胴感盃外毛が長く、体長が大きいことなどで区別される。他の2種は日本から既知のもので、八丈島産のハチジョウケナガイカダニ *D. infrequens hachijoensis* AOKI と沖永良部島産のエラブイカダニ *D. erabuensis* AOKI であった。

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